absorbing groups, the light fastening was further improved. The cis trans isomerisation of the azo chromophores was also retained even after incorporation into polymer framework, which could be used for photoswitching applications. The light absorption and fluorescence emission properties of the chromophores were found to be tremendously enhanced by incorporating onto polymer backbone.

The successful synthesis and stabilization of spherical silver nanoparticles was another important result that we obtained from the present work. Siver nanoparticles were stabilizedβ by encapsulating in hyperbranched polyglycerol networks and -cyclodextrin aggregates. The antibacterial and antifungal activity of the nanoparticle dispersed hyperbranchedβ polyglycerol and -cyclodextrin was also demonstrated against various bacterial and fungal strains.

Silver nanoparticles are effective biocompatible antimicrobial agents. Antibacterial and antifungal studies of silver nanoparticle encapsulated hyperbranched polyglycerols may be carried out on more bacterial and fungal stains. The mechanism of growth inhibition also presents an interesting study for our future works. It is possible to conduct a detailed investigation on the photophysical properties of nanoparticle dispersed and chromophore functionalized hyperbranched polyglycerols such as life time measurements etc. The effect of fluorophore concentration, p^H and excitation wavelength on the fluorescence emission properties of chromophore functionalized polymers could also be studied. The excited state decay of the functionalized polymers could also be investigated.

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List of Publications

1. Antifungal Activity of Silver Nanoparticle Encapsulated Hyperbranched Polyglycerol Against *Aspergillus* Species, **Cincy George**, Sunny Kuriakose, Shibumon George and Tessymol Mathew, *J. Life Sciences*, (accepted, in press, 2011).
2. Antifungalβ Activity of Silver Nanoparticle Encapsulated - Cyclodextrin Against Human Opportunistic Pathogens, **Cincy George**, Sunny Kuriakose, Shibumon George and Tessymol Mathew, *Supramolecular Chemistry* 23(8), 593– 597(2011).
3. Synthesis, characterisation and antibacterial applications of water-soluble, silver nanoparticle-encapsulated β-cyclodextrin, **Cincy George**, Sunny Kuriakose, B. Prakashkumar and Tessymol Mathew, *Supramolecular Chemistry*, 22(9), 511–516(2010).
4. Cis - Trans Isomerisation in Functionally Modified poly [di(ethylene glycol)/glycerol-alt-adipic acid] polyol Containing Azo Groups: A Novel Photoswitchable System, Sunny Kuriakose, Shaiju Augustine, **Cincy George**, Tessymol Mathew, and Mary Joseph, *Ind. J. Multi. Res.* Vol. 6 (1): 75 – 82 (2010).

Papers Presented in Seminars/Conferences

1. Development of aromatically modified and water soluble polyvinyl alcohol, poly ethylene glycol and polyglycerol for UV curing applications", National Seminar on Frontiers in Organic Chemistry, January 11-12, 2007, organised by Department of Chemistry, University of Calicut.
2. "Development of aromatically modified and water soluble polyvinyl alcohol, poly ethylene glycol and polyglycerol for UV curing applications", 19th Kerala Science Congress, Kannur, January 2007, organised by Govt. of Kerala.
3. "Aromatically modified linear and hyperbranched polyglycerols for UV curing applications", International Conference on Frontiers of Radiation and Photochemistry, February 8-11, 2007, organised by School of Chemical Sciences, M.G University, Kottayam.
4. Development of a Novel Aromatically Modified Photoresponsive Hyperbranched Polyglycerol for UV Curing Applications, International Conference on Advanced Materials, Mahatma Gandhi University, February 18, 2008.
5. Light Absorption and Fluorescence Emission Studies on Linear and Hyperbranched Polyglycerols Functionalized with 1-(5-(4-dimethylamino-benzylidin)-4-oxo-2-thioxo-thiazolidin-3-yl)-acetic acid, POLYMSYM 2008, April 3-5, 2008, organised by National Institute of Technology, Calicut.
6. Silver Nanoparticle Dispersed Hyperbranched Polyglycerols for New Generation Antimicrobial Coatings, NCNM-2008, October 10-12, 2008, Organised by CUSAT
7. Silver Nanoparticles in Hyperbranched Polyglycerols: Synthesis, Characterization and Antibacterial Activity, Proceedings of the National Seminar on Nanoscience and Nanotechnology (NSNST), Fatima Matha National College, Kollam, March 23-25, 2009.
8. Synthesis and Characterisation of Novel Water Soluble Silver Nanoparticles by Phase Transfer and their Stabilisation in Supramolecular Host Systems, Proceedings of the National Workshop on Quantum Confined Systems and Devices, St. Thomas College, Pala, Dec. 3-5, 2009.
9. Antibacterial Screening of Silver Nanoparticle encapsualetd Hyperbranched Polyglycerol against *E. Coli*, National Conference on Advances in Nanoscience and Technology (NANOSAT -10), Amal Jyothy College of Engineering, Kanjirappally, April 22-23, 2010.
10. Antimicrobial Activity of Silver Nanoparticle encapsualetd Hyperbranched Polyglycerol against *E. Coli*, National Seminar on Green Chemistry, Alphonsa College Pala, July 15-16, 2010.
11. Synthesis, Characterisation and antibacterial activity of Silver Nanoparticle encapsualetd Hyperbranched Polyglycerol, First Kerala Women Science Congress, St. Theresas College Ernakulam, August 10-12, 2010.